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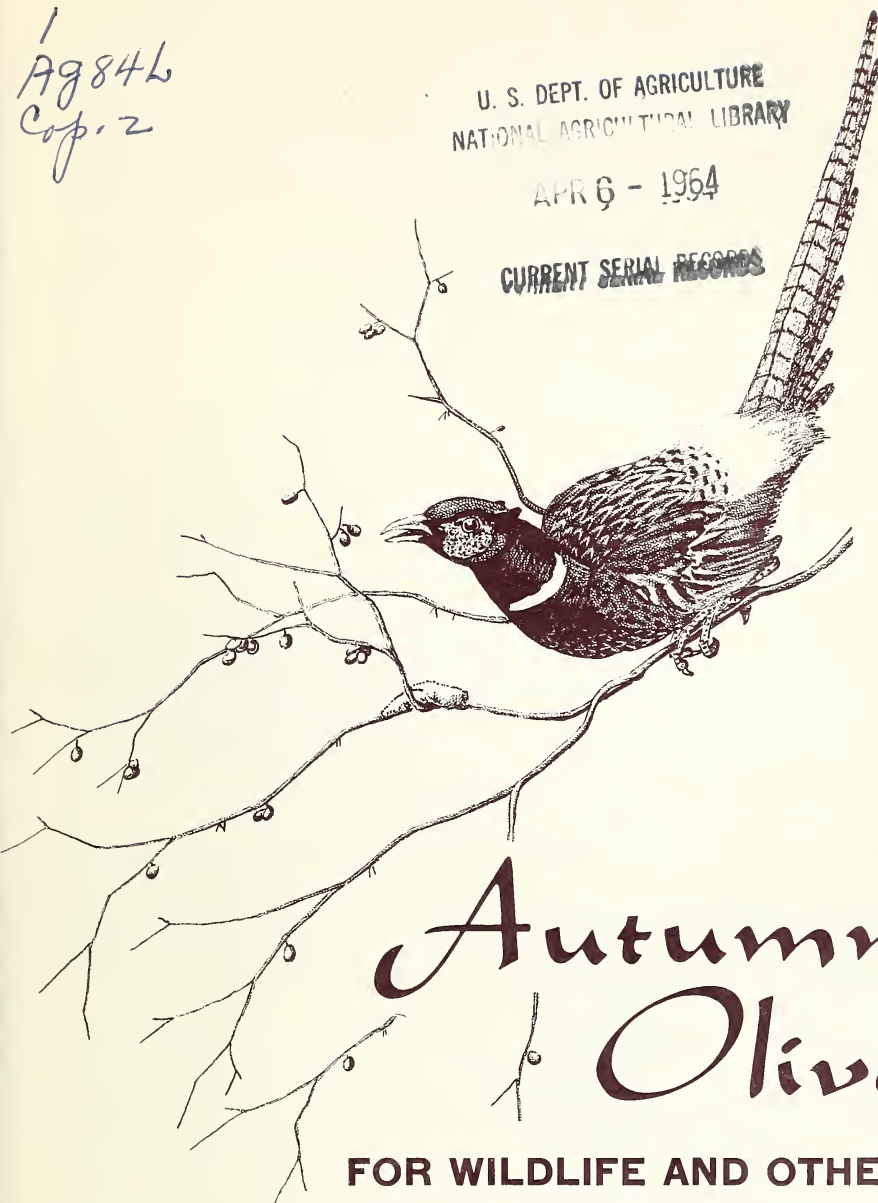
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Autumn Olive

FOR WILDLIFE AND OTHER
CONSERVATION USES

AUTUMN OLIVE — —

For Wildlife and Other Conservation Uses

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PEOPLE IN THE EAST who want to attract wildlife, conserve soil, beautify odd areas, establish plant barriers, or make ornamental plantings will find autumn olive a valuable plant.

Autumn olive is a shrub about the size of a large lilac bush. It has wide-spreading branches that furnish welcome cover for wildlife. In spring, autumn olive is covered with small, yellow, sweet-scented flowers. From fall to late winter its heavy crop of red berries beautifies the landscape and furnishes food for many kinds of birds.

In searching for useful wildlife plants, soil conservationists, wildlife technicians, nurserymen, and landscape specialists test many species. The discovery of the numerous uses of autumn olive is a result of such tests.



R1-N-289

Autumn olive has small, yellow, sweet-scented flowers.

Uses of Autumn Olive For Wildlife

Thickets or rows of fully grown autumn-olive plants furnish good protective cover for many kinds of wildlife. Songbirds find the branches excellent places for their nests; game birds and rabbits find shelter under the wide-spreading branches.

But it is as a producer of food for birds that autumn olive is most outstanding. For example, four 150-foot rows in southern New York yield 2 tons of berries yearly with great regularity. At the Soil Conservation Service Plant Materials Center, Beltsville, Md., 24 plants yield more than 900 pounds of berries yearly.

Birds eat the small berries of autumn olive from ripening time in September to late winter. Robins have been known to winter north of their normal range despite snows and severe cold when there were plenty of autumn-olive berries.

Bobwhite quail, ruffed grouse, and ringnecked pheasants find autumn-olive berries highly attractive food. But the berries are so tasty to songbirds that they sometimes leave very few for game birds. Though many of the berries fall by early winter and are available to ground birds such as quail, some of them hang on the twigs well into winter. These are plucked by grouse, pheasants, and small birds. It takes at least 100 autumn-olive plants to be certain of having enough food for both.

Other birds known to eat the berries are: Cardinal, catbird, cedar waxwing,



NY-173-3

Autumn olive (foreground) and multiflora rose (background) planted for wildlife food and cover.

common grackle, evening grosbeak, hermit thrush, mallard, mockingbird, mourning dove, myrtle warbler, purple finch, rufous-sided towhee, starling, tree swallow, veery, and wild turkey.

Mammal feeders include the black bear, opossum, and raccoon.

Most farms have odd areas such as narrow field corners, steep slopes, rocky spots, pond environs, and roadsides. Strips, blocks, or clumps of autumn olive can add beauty to these areas and make them useful to wildlife. Since food production is its major contribution to wildlife, wide spacing of autumn olive is needed to assure abundant annual berry crops.

Strips of several rows may be planted across sloping land. Here, the rows can be 10 to 20 feet apart with grassy strips between and the plants 6 to 8 feet apart in the rows.

Block plantings are spaced at least 8 feet by 8 feet, while those in small clumps may have wider spacing.

Clumps or rows of conifers or of multiflora rose with autumn olive also help make odd areas attractive to birds. For more information on multiflora rose, see "The Multiflora Rose for Fences and Wildlife," U.S. Department of Agriculture Leaflet 374.

Autumn olive is planted as a border along field edges. It is particularly suitable for borders along new plantations of conifers or other trees. It also does well next to young natural stands of woodlands. When used to border older stands, it is best to plant the autumn olive at least 20 feet from the base of the trees along the edge of the woods.

Sometimes other shrubs are used with autumn olive in these borders. Then, it is best to plant two rows of autumn olive next to the woods with the other shrubs in front. In border plantings, autumn-olive plants are spaced 6 feet apart in the row, and the rows about 10 feet apart.

For Screens and Barriers

As a hedgerow, autumn olive makes a screen that shuts out an unpleasant view or discourages trespassers. It will not, however, be dense enough to turn cattle or horses. For hedgerows, plants are spaced 4 to 6 feet apart. Two such rows 10 feet apart make a good windbreak. A single row of the olive next to one of spruce, pine, or cedar makes an excellent windbreak too.

For Erosion Control

Autumn olive has some longtime values on eroding places but is not highly effective as an erosion-control plant. It is particularly useful on such places as strip-mine spoil banks, sand-blow areas, streambanks, and gullied areas. Autumn olive hides these eyesores quickly and in time lays down a protective litter on the soil. On bare areas its light shade and deep roots encourage natural establishment of grass and other soil-protecting plants. Also, wildlife find food and shelter in such plantings.

For Other Uses

Autumn olive is too large and spreading to make good ornamental plantings on the ordinary city lot except as single plants. Where space allows, however, the silvery green foliage and red berries of autumn olive against a background of conifers make pleasant and unusual additions to the landscape. Since these shrubs are highly favored by songbirds, locating landscape plantings should be done so that the birds can be enjoyed.

Although autumn-olive flowers are not showy, they are produced in great

abundance and their sweet scent perfumes the air. Honeybees are attracted to them. Nothing is known about the kind of honey produced from autumn-olive flowers, but the plant may prove interesting to beekeepers.

The Japanese sell the berry-laden twigs on the streets and eat the fresh berries. Autumn-olive berries are, perhaps, somewhat astringent for American tastes, but they can be used for jelly.

What It Is

Autumn olive is known by several names. Its scientific name is *Elaeagnus umbellata*. It is also called autumn elaeagnus and pink-fruited elaeagnus. Autumn olive was introduced in this country about 1830 from China or Japan. It is related to several other introduced plants—the Russian-olive, the summer olive, and some others—as well as to the native silverberry of the West.

Autumn olive is a wide-spreading shrub, often growing as high as 10 to 15 feet. Its main trunk and large branches are dark brown; the smaller branches and twigs are yellowish brown and rather spiny. Leaves of autumn olive are from 2 to 3 inches



Double rows of autumn olive make a good windbreak.

NY-173-2



WV-150-2

Autumn olive planted for soil protection and wildlife on strip-mine spoil.

long and have wavy edges. They range in shape from slender to oblong and are spaced alternately on the twigs. The upper sides of the leaves are green with silvery scales, while the undersides are silvery with brown scales. Autumn olive sheds its leaves in the fall.

In May autumn olive has an abundance of sweet-scented flowers. They are yellow, small (about one-quarter inch long), and trumpet shaped. The flowers grow singly or in clusters along the twigs and small branches.

When autumn-olive berries ripen in September, they are red with brown scales. They average about one-quarter inch long. Within the fleshy covering is a pit or seed—long, soft, and ribbed. The berries that do not fall to the ground in early fall turn yellowish brown and raisinlike. Berry crops are heavy and dependable.

Where and How It Grows

Autumn olive grows naturally in thickets along streams and roadsides from Afghanistan eastward through the Himalayas and northern India to

Korea and Japan. In its native territory, it grows at elevations up to 9,000 feet. In the United States, on the basis of Soil Conservation Service field plantings, autumn olive is known to be adapted from Maine to Georgia and westward to Ohio. (See map, back page, for zones of proved, probable, and possible adaptability.) It probably will prove satisfactory as far west as the Mississippi River. Some winter injury has been noted where temperatures reached -30° F. Usually the plants recover.

Autumn olive grows well on sandy, loamy, and moderately heavy clay soils that are moist to well drained. It does less well on very dry soils. Autumn olive does not require highly fertile soil and appears to thrive equally well on soils ranging from moderately acid to moderately alkaline. It is tolerant of light shade, but has fewer berries when grown in shade. Competition from grass, weeds, or other shrubs slows the growth of young autumn-olive plants, but they overcome such competition well.

Under favorable conditions, autumn olive grows rapidly and has berries by

its third to fifth year. By then, it is usually 4 to 8 feet tall.

Autumn olive sometimes is heavily browsed by deer and nipped by rabbits, but persists in spite of this.

Planting and Care

Careful planting of autumn olive pays off in successful establishment. Seedlings 1 or 2 years old generally are used. They may be planted either in the fall after leaf drop or in the spring while they are still dormant. Plantings for borders, hedgerows, windbreaks, and other strips do best if the site is plowed, harrowed, and allowed to settle before planting. Block plantings may be made in deep plow furrows or in spots from which sod has been scalped. Small clumps may also be planted in scalped areas.

The roots of the seedlings must be kept moist until planted. Holes for the plants should be deep enough to take the full root without bending.

Unusually long roots may be pruned back to 6 inches and the tops also cropped to 6 inches. Soil must be packed firmly around the roots and stamped down. On poor soils a scant handful of 5-10-5 or 10-10-10 fertilizer per plant, well mixed with the soil, helps plants get off to a good start. On dry sites mulches of straw, sawdust, or wood chips are helpful. Autumn olive grows slowly in heavy sod, but cultivation around the plants for a year or two speeds their growth.

Planting Stock

Planting stock of autumn olive has been available commercially since 1917. A few private or institutional nurseries are supplying plants at moderate cost, but at present the supply is generally scarce.

Plants may be grown easily from seed by following a few important steps. Several commercial firms sell the seed or it may be collected from plants already established.



WV-150-5

The wide-spreading branches of autumn olive are pleasing in the landscape.



MD-30,317

In the fall and winter, autumn olive has numerous red berries that furnish food for many kinds of birds and beautify the landscape.

Autumn-olive berries are collected for seed as soon as they turn red in the fall. A tarpaulin or sheet laid on the ground around the plant will catch most of them as they are stripped off by hand. Removing the seeds from the pulpy berries promptly is important, for they ferment and heat if stored very long in containers.

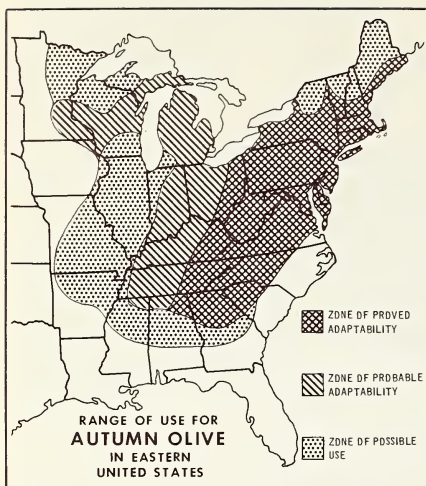
To clean the seeds, the berries are mashed lightly against a screen made of 1/8-inch hardware cloth to separate the pulp from the seeds. Hardware cloth of the same mesh tacked over a small block of wood makes a good tool for mashing. Mashing too hard damages the semisoft seeds. The mashed pulp can be readily washed through the screen, leaving clean seed. The seed should be spread out on a clean surface and allowed to dry in a shady, airy place. Usually, 10 pounds of fresh berries yield slightly more than 1 pound of clean seed, or about 22,000 seeds.

For good results, autumn-olive seed is planted about the latter part of

October. The seeds should lie in wet, cold soil during winter to germinate well in the spring. Germination of good seed will range from 60 to 85 percent.

Autumn olive can be seeded in garden-type rows or broadcast on a prepared seedbed. A well-drained loamy soil is ideal. First, the area to be seeded is plowed. Then 600 to 800 pounds of 10-10-10 fertilizer per acre is applied. This is followed by harrowing; then the soil is packed down lightly to give a smooth, moderately firm seedbed.

For broadcast plantings, the seedbeds are usually about 4 feet wide to make hand weeding easy. The beds must be kept free of weeds during the growing season. For every 48 square feet of bed, 8 ounces of clean seed is sown evenly. The seeds are covered one-fourth to one-half inch deep with a layer of sand or very light sandy soil. A pound of seed broadcast this way usually yields about 3,000 usable year-old seedlings. It may yield as many as



Range of use for autumn olive for eastern United States.

4,000. Where wind erosion is a problem, a very light straw mulch can be spread over the bed and held in place with slats or branches. The mulch should be removed before germination begins in the spring.

For row plantings, the seed can be drilled in rows 8 to 10 inches apart with a mechanical garden-type seeder. The seed is planted $\frac{1}{2}$ inch deep at the rate of about 25 seeds per linear foot of row. Leaving a 2-foot strip between each strip of 4 or 5 rows makes space for walking, weeding, and

digging as the plants grow. With the row method, mechanical cultivators or a hand-pushed wheel hoe can be used for weeding. This reduces handwork. About the same number of plants will be produced in a given area by either the broadcast or the row method.

If fall planting is impractical, treating the seed and planting in the spring bring good, but less uniform, results. The seed is placed in a cloth bag and soaked in cool water for 24 hours. Then the bag of seed should drain but not dry out. The moist bag of seed is refrigerated for 30 to 45 days at a temperature of 36° to 38° F. The treatment is timed so that the seed can be removed from the refrigerator and planted immediately at the start of the normal spring planting season in the locality. Planting is the same as for fall plantings.

Planting stock suitable for permanent transplanting can usually be grown in one season. For best results, the plants should be at least 10 inches high with a lower stem thickness of not less than three-sixteenths of an inch. Stock may be dug in the fall following leaf drop or in the spring while it is still dormant. The weak and spindly plants should be discarded, since few will survive. Bare-root seedlings survive shipping and transplanting well provided they are kept cool and moist until planted.

A tendency of autumn olive to spread may keep some people from planting it. Spreading has been observed on sand blows, strip-mine spoil banks, and some State game lands. In all of these places, however, spreading is desirable. There is no evidence of its spreading on croplands or well-kept pastures. It may increase on idle land as do many other shrubs such as thornapple, blackberry, sumac, and meadow rose. Although some old naturalized thickets have been reported, no places are known where autumn olive is considered a pest.

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